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Highlights

Report of the Forest Service

Fiscal Year 1993

FS 568

Secretary's Message

In the spirit of Team USDA and the spirit of cooperation stressed by the Clinton administration, the Forest Service has worked to improve interagency communication and coordination to fulfill its land stewardship and public service mission.

Widespread implementation of ecosystem management within all activities of the Forest Service was a major priority in FY 1993. In national forests across the United States, the Forest Service is incorporating ecosystem management principles. The Forest Service took significant steps in developing a national ecological classification system, which will provide the organizational framework for information about ecosystems and facilitate implementation of the ecosystem management approach.

Working in partnership with the other Federal agencies, the Forest Service is formulating the President's Forest Plan for a Sustainable Economy and a Sustainable Environment in the Pacific Northwest and Northern California. The Forest Service is leading the change in land and resource management strategies on national forests and other Federal lands in the region to balance sound conservation considerations with economic concerns.

The Forest Service started streamlining its operations in 1993 in response to my call for a new USDA. With its numerous field offices, the Forest Service will play a critical role in coordinating field office consolidation and improving the efficiency of administrative operations in the Washington, DC, headquarters.

Forest Service employees exemplify the spirit of the "people's department" as they help citizens enjoy the Nation's natural resource treasures and act as steward of those resources. In 1993, the Forest Service demonstrated its commitment to improving its care for the land and service delivery to Americans. In the years ahead, the Forest Service will continue to help USDA reinvent itself so that it can better fulfill the diverse missions of the "people's department."

With new thinking and new management led by Chief Jack Ward Thomas, I expect 1994 to be an outstanding year of both service and stewardship for the Forest Service.

MIKE ESPY
Secretary

Chief's Message

The values Americans place on the natural world are changing dramatically. The Forest Service has been responding to these changes, but more, much more, remains to be done and changes lie ahead. The American people want us to expand our commitment to the sustenance of these resources, improve accountability for our actions, and respond to the desires and needs of our customers, the American people. They expect healthy and productive wildlife, enhanced recreation resources and opportunities, as well as the sustained production of goods and services. They also demand more effective, efficient, and responsive Government at reduced cost.

This climate of change offers unprecedented opportunities and challenges. It invites discarding outmoded procedures, building on past successes, and pursuing new strategies. It encourages us to boldly enhance our role as national and international leaders in sustainable forestry and to embrace new approaches to forest stewardship.

The Forest Service's Mission, Vision, and Guiding Principles published in March 1993 describe an idealistic vision of our organization and a set of institutional values. But I believe these principles embody direction, policy, and philosophy that, when followed, will improve the chances to sustain healthy and productive ecosystems.

I am proud of our commitment to the land, the resources, and the American people. I am confident that our constantly improving ability to work in partnership with the international community, other government agencies, citizens' groups, commodity interests, and the environmental community will provide long-term benefits. We face more disagreement over how public lands and resources should be managed than at any time since Gifford Pinchot was Chief. Yet, our ability to synthesize science, research, and new technologies offers an enhanced view of the land's capabilities and the means for the next step along the path of conservation that we have pursued since 1905.

Through the first steps of applying principles of ecosystem management, we continue steady progress toward attaining the multiple-use management objectives that guide us. We have established classification and mapping systems that provide the ecological basis to exchange data and information within our agency. That data and technology will be available to our Federal, State, and private resource management partners. The President's Forest Plan for a Sustainable Economy and a Sustainable Environment in the Pacific Northwest and Northern California provides direction for long-term sustainability of forest resources in that region. It demonstrates that applying scientific expertise to difficult policy issues can lead to creative solutions for problems previously deemed unsolvable.

Increasing the application of science in natural resource management decisions is critical to progress in developing and implementing ecosystem management. Our research program remains focused on providing basic scientific and technical knowledge that will improve the productivity, health, and diversity of forest and rangeland ecosystems. We can enhance our on-the-ground application of this knowledge through constant reinvestment in the technical expertise of our resource professionals. The dedication this past summer of the Aldo Leopold Wilderness Research Institute and Arthur Carhart National Wilderness Training Center illustrates the commitment to train resource managers and to facilitate the integration of science, policy, and management across organizational and internal agency boundaries.

The agency's commitment to sustainable forest management provides opportunities to demonstrate leadership in international forest resource conservation and to use our increasingly effective stewardship as a worthy standard for forest management around the world. The International Forestry Program continues to foster partnerships, such as the recently convened forum of "community of interests," to share information, develop strategies, and tailor approaches to address international forestry issues.

The Forest Service is increasingly committed to collaborative planning, community involvement, and citizen participation in resource management. The Forest Stewardship and Community Assistance Programs are aimed at developing a new spirit of Government and citizen cooperation where it counts most—where we live and work together.

In the years ahead, commitment to leadership and change will afford myriad opportunities to meet the goal of sustaining the resources of our Nation's forests and grasslands. I invite you to work with the Forest Service's dedicated employees to set a new course in fulfilling our charter to care for the land and serve people.

Jack Ward Thomas

JACK WARD THOMAS
Chief

Selected FY 1993 Statistics

National Forest System	191 Million Acres
Recreation Use	295.5 Million Visitor Days
Trail System	121,059 Miles
National Scenic Byways	6,922 Miles
National Wild and Scenic Rivers System	4,316 Miles Within National Forests
Lands Burned by Wildfire	238,625 Acres
Insect and Disease Suppression	3.1 Million Acres
Wilderness	35 Million Acres
Watershed Improvements	24,119 Acres
Wildlife and Fish Habitat Improvements	202,868 Acres
Reforestation	474,000 Acres
Livestock Grazing	9.8 Million Head Months
Grazing Allotments Administered	9,343 Permits
Mineral Operations Processed	3,800 Plans
Timber Volume Offered	4.6 Billion Board Feet
Timber Harvested	5.9 Billion Board Feet
Road System	369,385 Miles
Landline Boundary System	253,114 Miles
Woodland Owners Assisted	190,256
Research Accomplishments	>2,500 (Includes books, papers, articles, reports, audio-visual materials, and other documents.)
Human Resource Programs	135,556 Persons Served

To comply with the Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974, the Secretary of Agriculture submits an annual report to Congress. This report summarizes the performance of the Forest Service in implementing the 1990 RPA Program ("The Forest Service Program for Forest and Rangeland Resources: A Long-Term Strategic Plan") in response to congressional direction and appropriations for FY 1993. In this report, results of management, fiscal information, and highlights of Forest Service programs during FY 1993 are presented.

Mission, Vision, Guiding Principles

... blending the diverse needs of people with quality stewardship of natural resources.

The Forest Service tradition of national leadership in natural resource conservation, management, and research is embodied in the motto "Caring for the Land and Serving People." However, global concerns over sustainability of natural resources, constant changes in public values and preferences for natural resource management, as well as changes in work force composition have increased the need for a more comprehensive framework to guide the agency into the next century. After more than 2 years in the development process, the Forest Service Mission, Vision, and Guiding Principles were released in March 1993. These principles enhance the motto to reflect a broader reference to the roles the agency assumes in blending the diverse needs of people with quality stewardship of natural resources.

Resource Management Programs

... integration of five resource programs:

Forest Service missions are achieved through the integration of five resource programs: (1) management of the National Forest System, (2) assistance to State, private, and other Federal landowners, (3) scientific research, (4) international forestry cooperation, and (5) human resources.

The National Forest System comprises 191 million acres of public land which include national forests, national grasslands, land utilization projects, and other selected lands and waters. These lands are managed in compliance with the Multiple-Use Sustained-Yield Act of 1960, the RPA of 1974, as amended, and the National Forest Management Act (NFMA) of 1976, which emphasizes management of natural resources to best meet the needs of the American people without impairing the productivity of the land.

... ecological approach to the implementation of multiple-use management.

During FY 1993, the Forest Service actively pursued an ecological approach to the implementation of multiple-use management activities as the most important management policy for natural resource management of the national forests and grasslands. Results of implementation are evident in the higher emphasis being placed on protection and restoration of resource conditions. Embracing ecosystem management and ensuring environmentally acceptable commodity production as a working philosophy is being emphasized in research seminars, forest and grassland field activities, regional conferences, and nationwide symposia. Managers are focusing on a wide range of demonstrations and applications including forest health maintenance, management of riparian ecosystems, economic support to communities, restoration of natural processes, and integrated data collection using state-of-the-art technology. Focal points include ecological trends and how ecosystems are affected by natural disturbances and human interactions with ecosystems. Four principal guiding areas include: (1) ecological approach, (2) partnerships, (3) participation, and (4) scientific knowledge.

Partnerships with public and private entities...

Technical and financial cooperation with, and assistance to, State, local, and private landowners in managing, protecting, and using non-Federal forest resources are coordinated through State and Private Forestry programs. Partnerships, with a wide variety of public and private entities, help direct assistance to other Federal, State, and local agencies, State foresters, Native Americans, private landowners, and the international community. Forest pest management and fire management assistance are also provided to resource managers of all land ownerships, including the National Forest System.

Benefits from research extend beyond National Forest System ...

Forest Service research programs provide the scientific foundation for sustainable forest development and improve the agency's ability to ensure the health, diversity, and productivity of forest and grassland ecosystems. Benefits from research extend beyond National Forest System boundaries to other public and private land managers and to other regions of the world through technical assistance and technology transfer programs.

... global natural resource policies.

The Forest Service, in partnership with other nations and organizations, fosters global natural resource conservation and sustainable development of the world's forest resources. International forestry activities include sharing and exchanging research and technical knowledge with other countries, assisting in natural disasters abroad, supporting international forestry organizations, and developing global natural resource policies.

The Forest Service employs a professional and diverse permanent work force and hosts a number of special human resource programs that employ, train, or educate specific groups of people. These programs are integrated into all agency activities and accomplish high-priority conservation work.

Ecosystem Management

Ecosystem management...the operating philosophy of the Forest Service.

Ecosystem management has been embraced as the operating philosophy of the Forest Service. This approach ensures that stewardship of lands and resources is accomplished in an environmentally sensitive, socially responsive, and scientifically sound manner. It enables resource managers to view natural resources from a landscape or whole system perspective. It integrates the human, biological, and physical dimensions of natural resource management to promote healthy, productive, and sustainable forest and rangeland ecosystems.

...the human dimension of ecosystem management.

Using an ecological approach to guide management of the Nation's forests and grasslands is an important step in integrating the Mission, Vision, and Guiding Principles into agency operations. Ecosystem management provides the framework and tools necessary for the agency to evolve with its program direction. For example, tracking the human dimension of ecosystem management provides the feedback necessary for the agency to respond effectively to society's diverse and changing values, and subsequently to renew or revitalize its own mission.

Hierarchical ecosystem mapping and classification system...

The Forest Service has made some important progress during FY 1993 in defining and implementing the concepts of ecosystem management across the full spectrum of agency programs. Accomplishments included the development of an hierarchical ecosystem mapping and classification system, the completion of some major regional ecosystem assessments, and numerous pilot and demonstration projects.

...incorporation of ecosystem management knowledge into on-the-ground management.

Because of its complexity, ecosystem management requires an accelerated scientific effort and the efficient incorporation of that knowledge into on-the-ground management. In response, Forest Service research has committed to the "Strategies for the 90's" research plan. This plan endorses a research program focused on developing knowledge and solving problems in: (1) understanding ecosystems, (2) understanding relationships between people and natural resources, and (3) understanding and expanding resource options. State and Private Forestry began communicating the benefits of applying ecosystem management principles across multiple ownerships in conjunction with its voluntary partnerships with nonindustrial private forest landowners. International Forestry has been actively participating, in cooperation with other organizations and countries, in defining and promoting sustainable management of forest resources. International Forestry also has been involved in preliminary efforts to develop indicators of sustainability. An important factor in successful implementation of ecosystem management is the ability to define, measure, and monitor sustainability of forest ecosystems.

The 1990 Forest Service Program for Forest and Rangeland Resources: A Long-Term RPA (Resources Planning Act) Strategic Plan

The Forest Service's national strategic plan, the 1990 RPA Program, outlines the agency's long-term strategic direction and provides general policy guidance through 1994. The resource vision for the agency is set forth in the RPA Program and is integrated into all lower level planning. The RPA Program is updated at 5-year intervals and provides strategic direction for a 50-year planning horizon. The 1990 Program defined the major policy roles of the Forest Service and analyzed its relationship with and responses to contemporary issues. From these roles and issues, four major themes emerged which have guided Forest Service actions and policies since 1990. The four themes are:

- Recreation, wildlife, and fisheries resource enhancement;
- Environmentally acceptable commodity production;
- Improved scientific knowledge about natural resources; and
- Responding to global resource issues.

Measures of agency performance...

These themes are important to the evaluation of Forest Service performance in FY 1993 and are used in this chapter as a framework to report actions which fulfill the long-term strategic direction of the agency. Figure 1 displays selected measures of agency performance for FY 1993 along with FY 1992 information for comparison purposes.

... to increase compatibility among multiple uses.

Recreation, Wildlife, and Fisheries Resource Enhancement

The Forest Service continues to emphasize enhancing the production of recreation, wildlife, and fisheries outputs on National Forest System lands and enhancing these resources on State and private forest lands through technical and financial assistance. Research continues seeking ways to increase compatibility among multiple uses. Forest Service programs in recreation focus special attention on increasing the quality of recreation opportunities. The agency plays a major role in restoring, protecting, and improving habitat for various plant, wildlife, and fish species.

...295.5 million recreation visitor days; 18,000 facilities.

Outdoor recreation use on National Forest System lands reached 295.5 million recreation visitor days (RVD) in FY 1993 (see figure 2). (A recreation visitor day is 12 hours of visitation by one or more persons.) This represents a 2.7-percent increase over recreation use reported for FY 1992 and is 96 percent of the total RVD's projected for FY 1995 in the 1990 RPA Program. National Forest System lands can accommodate 1.8 million people at one time (PAOT) at over 18,000 facilities, which include campgrounds, trailheads, boat ramps, picnic areas, visitor information centers, and ski resorts. (PAOT's are calculated by multiplying a site's design capacity by the number of days per year that the site is open for public use.) In FY 1993, the Forest Service operated and maintained facilities with a yearly capacity of 144.1 million PAOT days. Twenty percent of the National Forest campground capacity is managed under special-use permit.

...34.6 million acres of wilderness.

The Wilderness Preservation System plays an important role in protecting fragile ecosystems and in preserving natural resources for scientific, educational, and historic values. In FY 1993, the Forest Service coordinated dedication of the interagency Arthur Carhart National Wilderness Training Center and the Aldo Leopold Wilderness Research Institute in Missoula, Montana. Establishment of these two centers demonstrated a commitment to improved wilderness management through integration of science, policy, and management across organizational and agency boundaries. With the addition of 553,203 acres, the Wilderness Preservation System within the National Forest System expanded to 34.6 million acres in FY 1993.

Figure 1.

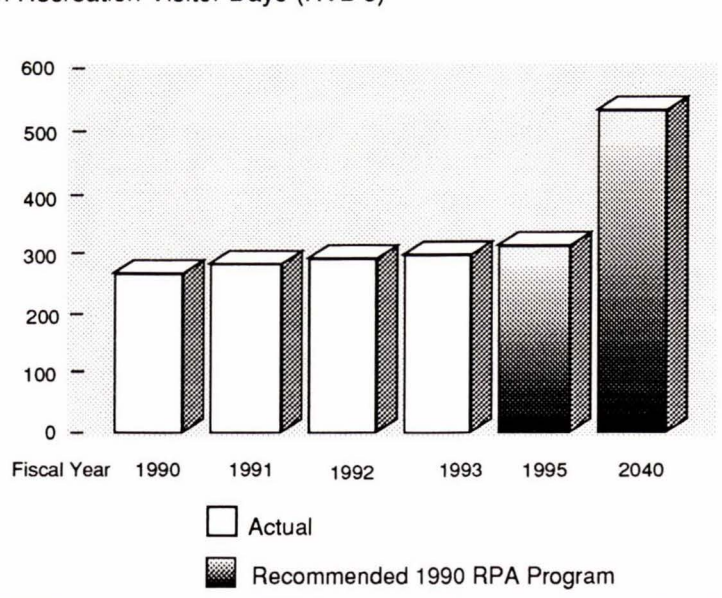
MEASURES OF PERFORMANCE

	Accomplishments	
	1993	1992
NATIONAL FOREST SYSTEM		
Miles of road constructed	816	1,180
Miles of road reconstructed	2,625	3,259
Acres of land purchased	115,731	157,018
Acres of land exchanged	81,956	69,102
Number of rights-of-way easements acquired or resolved	729	657
Plans of mineral operation processed 1/	3,800	3,565
Head months permitted to graze (millions)	9.8	9.4 2/
Acres meeting or moving toward forest plan objectives for rangeland ecosystems (millions) 1/	47.5 3/	NA
Recreation capacity maintained (million PAOT-days) 1/	144.1	135.8
Trail miles maintained (thousands) 1/	71.2	69.8
Timber volume offered (billion board feet) 1/	4.6	5.1
Timber volume harvested (billion board feet)	5.9	7.3
Acres reforested (plant/seed/site prep.) (thousands)	474	492
Acres of timber stand improvement (release/thin/etc.) (thousands)	344	354.8
Acres of watershed improvements (thousands) 1/	24.1	26.4
Wildlife & fish structures completed (thousands) 1/	18.2	19.9
Acres of wildlife & fish improvements (thousands) 1/	203	243
STATE & PRIVATE FORESTRY		
Acres of pest suppression activities completed (millions) 1/	3.1	1.7
Acres under stewardship management (millions) 1/	2.6	1.7
Acres of Federal/State rural tree planting (thousands) 1/	668	678
Acres of National Forest System lands treated for fuels management (thousands) 1/	385	285
RESEARCH		
Research accomplishments in the following major subject areas:	>2,500 4/	>2,600 4/
Environmental		
Insect and disease		
Fire and atmospheric sciences		
Forest management		
Economics, marketing, and recreation		
Products and engineering		
Miscellaneous		
INTERNATIONAL FORESTRY		
Person years of international technical assistance 1/	207	NA 5/
Person years of international training 1/	552	NA 5/
Person years of cooperative research/scientific exchange 1/	69	NA 5/
ADMINISTRATION		
Percent of total Forest Service payments incurring late payment interest penalties	1.7	2.1
Work force profile:		
Men		
African American	693	690
American Indian/Alaskan Native	945	973
Asian/Pacific Islanders	247	243
Hispanic	1,152	1,187
White	18,058	18,680
Women		
African American	778	797
American Indian/Alaskan Native	672	693
Asian/Pacific Islanders	262	269
Hispanic	665	668
White	11,470	11,937
Total, permanent and excepted employees	34,942	36,137

1/ Measure is estimated or qualified.
2/ Calendar year data (animal unit months).
3/ Includes 25.4 million acres meeting forest plan objectives and 22.1 million acres moving toward forest plan objectives.
4/ Includes books, papers, articles, reports, audio-visual materials, and other documents.
5/ Information not available.

Figure 2.

Recreation Use, Including Wildlife and Fish



...121,059 miles of trails.

A total of 71,152 miles of trails were maintained on National Forest System lands in FY 1993. The total trail system contains 121,059 miles. Properly maintained trail systems provided opportunities for high-quality recreational experiences and minimized adverse impacts on recreation resources.

More than 1,300 volunteers in the Heritage Program.

Public awareness regarding use of cultural resource sites increased this past year. Inventory, protection, and enhancement of significant historic and archaeological sites on national forests are coordinated through the Heritage Program. During FY 1993, over 1,300 volunteers contributed approximately 51,000 hours to 92 "Passport In Time" (PIT) projects that included archaeological excavation, historic reconstruction, oral history collection, survey, monitoring, and restoration. PIT projects took place on 66 National Forests in 8 out of the 9 Regions and in 27 States.

...4,316 miles of wild and scenic rivers; 120 national scenic byways covering nearly 6,922 miles.

The national forests provide unique opportunities for a wide spectrum of recreation activities in a variety of settings. Two examples are the Wild and Scenic Rivers Program and the National Scenic Byways Program. The National Wild and Scenic Rivers Program encompasses 10,410 miles. The Forest Service manages 4,316 of those miles. Wildlife, fish, and recreation opportunities are enhanced through protection of the freeflowing characteristics of designated river segments. The National Scenic Byways Program identifies scenic travel routes having outstanding aesthetic, cultural, and historical values. The Forest Service designated its first national forest scenic byway in 1988. The program has grown to 120 national scenic byways within National Forest System lands in FY 1993, covering nearly 6,922 miles in 34 States. Eleven scenic byways were nominated in FY 1993; 9 of the 11 were added to the National Forest Scenic Byways Program.

...habitats for one-third of the federally listed threatened and endangered species; 2,200 sensitive species.

The Forest Service manages important habitats for approximately one-third of the federally listed threatened and endangered species. Continued pressure on Federal lands for protection of diverse habitats is expected as private land continues to be developed. Partnerships with private organizations and other State and Federal agencies are coordinated through the "Every Species Counts" program, designed to recover and conserve rare species. Forest Service management activities contributed to the reclassification of two endangered species in FY 1993. The old-arlane's four o'clock (*Mirabilis macfarlanei*), a perennial with large magenta flowers, was proposed for downlisting to threatened

status. The Louisiana pearlshell (*Margaritifera hembeli*), a freshwater mussel, was reclassified to threatened status. In FY 1993, efforts were made to identify and manage 2,200 sensitive species on forest and grassland ecosystems to prevent the need for costly and restrictive Federal listing.

Aquatic habitat restoration and management...

Maintenance of high-quality natural habitats in lakes, streams, and rivers is critical to the health and survival of native fish and aquatic species such as mussels, snails, and aquatic insects. Aquatic habitat restoration and management on National Forest System lands are coordinated under the "Rise to the Future" fisheries program. Interpretive and educational events for forest visitors play an important role in communicating the value of aquatic ecology research and habitat management in maintaining healthy, productive aquatic ecosystems. In cooperation with many public and private partners, the Forest Service hosted over 300 events as part of the 1993 National Fishing Week. This initiative has promoted the importance of family outdoor activities. It also demonstrates the agency's commitment to sport and recreational fishing.

Habitat improvement projects on 202,868 acres...

In FY 1993, habitat restoration and enhancement projects for wildlife, fish, and rare plants were completed on 202,868 acres. The Forest Service also built 18,192 habitat improvement structures such as nesting boxes and watering devices. Watershed improvement projects were completed on 24,119 acres through revegetation, soil stabilization, and stream channel rehabilitation efforts. Nearly 8 million acres of wildlife, fish, and threatened, endangered, and sensitive species inventory were completed.

...16,982 acres of inland fish habitat improvements and 4,928 fisheries habitat improvement structures; 6,012 acres and 4,116 structures for anadromous fish.

In FY 1993, the Forest Service accomplished 16,982 acres of inland fish habitat improvements and 4,928 fisheries habitat improvement structures with protection and maintenance funds. Improvement of anadromous fish habitat was accomplished on 6,012 acres and a total of 4,116 anadromous fish habitat improvement structures were completed. This represents 84 percent of the total number of habitat improvement structures projected for FY 1995 in the 1990 RPA Program.

PACFISH--a common strategy to enhance Pacific anadromous fish habitats.

In March 1993, the Forest Service and the Bureau of Land Management (BLM) announced their commitment to developing a common strategy that would address declining populations of Pacific anadromous fish (PACFISH). The PACFISH strategy, developed cooperatively by watershed and fisheries research scientists, forest managers, and fisheries biologists, is concerned with maintaining or restoring healthy, functioning watersheds, riparian areas, and associated fish habitats. This is reflected by easily quantifiable habitat features that are good indicators of system health such as pool frequency, water temperature, woody debris, streambank stability and lower bank angle, and width-to-depth ratio. PACFISH is an interagency effort to provide habitat conditions on Forest Service and BLM administered lands that contribute to the recovery and sustained natural production of Pacific salmon, steelhead, and sea-run cutthroat trout.

Acquired 115,731 acres of critical lands.

The Forest Service land acquisition program purchases tracts of land identified as important for recreation opportunities, conservation of threatened or endangered species habitat, protection of significant cultural resources, acquisition of wetland and riparian areas, or protection of rare ecological areas. In FY 1993, the Forest Service acquired 115,731 acres of lands, including nationally significant areas such as the Glen House Tract in the White Mountains of New Hampshire and Hope Valley in California.

...reduced 820 miles of property boundaries, saving an estimated $4.5 million in landline location costs.

Land exchange involves the voluntary conveyance of National Forest System lands for an equal fair market value of non-Federal lands. In FY 1993, the Forest Service acquired 81,956 acres of non-Federal land. The exchanges often are promoted to protect critical resources from adverse development, or to consolidate scattered parcels of National Forest System or congressionally designated lands. In FY 1993, the land exchange program reduced national forest property boundaries by 820 miles, saving an estimated $4.5 million in landline location costs.

...729 right-of-way cases were resolved.

A total of 729 right-of-way cases were resolved in FY 1993, compared to 657 cases in FY 1992. The rights-of-way acquisition program allows access needs to be met by: (1) acquiring right-of-way easements, (2) eliminating the need for rights-of-way by completing landownership adjustments, such as land purchases or exchanges, or (3) assisting in validating the outstanding public status of rights-of-way through cooperative efforts with State and local government agencies and others.

Environmentally Acceptable Commodity Production

The level of commodity production on National Forest System lands has been adjusted downward where commodity production cannot be accomplished in an environmentally acceptable manner. The Forest Service has emphasized this sensitivity when providing assistance to State and private landowners. In addition, Forest Service research programs have developed new techniques and knowledge to protect the environment while fulfilling the agency's mandate of multiple-use management. Agencywide commitment to an ecological approach to multiple resource management provides the strong framework for environmentally sensitive commodity production.

Reforested 474,000 acres and conducted timber stand improvement treatments on 344,000 acres.

Reforestation and timber stand improvement are essential practices to rehabilitate and support healthy, sustainable forest ecosystems. In FY 1993, the Forest Service reforested 474,000 acres of National Forest System lands. Timber stand improvement treatments were accomplished on 344,000 acres.

Timber production on National Forest System lands declined in FY 1993. The 1990 RPA Program ("The Forest Service Program for Forest and Rangeland Resources: A Long-Term Strategic Plan") projections did not account for as much of a reduction in timber offers as resulted from increased protection of threatened and endangered species habitat, such as northern spotted owl and red-cockaded woodpecker, and increased protection of old-growth forests and watersheds.

Timber offered was 10 percent below FY 1992.

The total timber offered for sale in FY 1993 was 4.6 billion board feet (figure 3). This was almost 10 percent below the levels offered in FY 1992, and represents the third straight year the volume offered has declined. The timber volume harvested was 5.9 billion board feet, a 19 percent reduction from FY 1992.

Clearcutting is declining faster than proposed in the 1990 RPA Program.

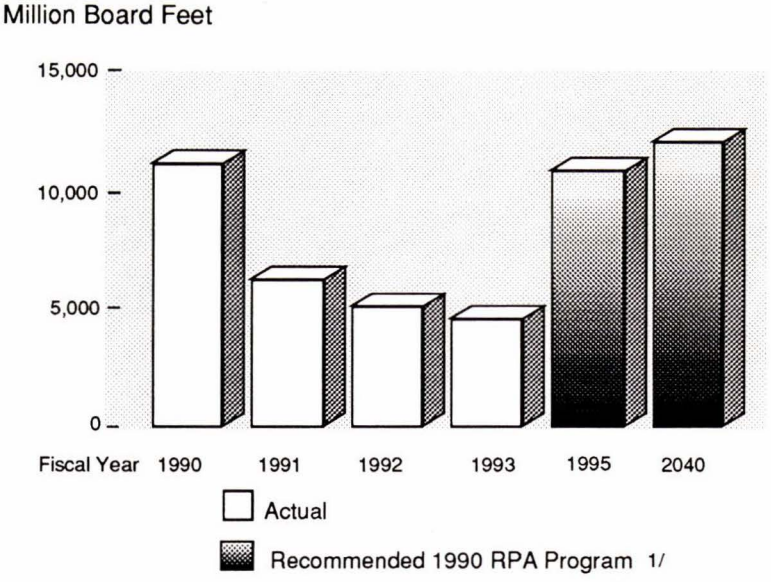
In FY 1993, the Forest Service remained committed to reducing the use of clearcutting as a standard commercial timber harvest practice on the national forests. Clearcut acres and the percentage of total harvest from clearcutting continued to decline from historic highs in the 1980's. In FY 1993, a total of 732,463 acres were harvested. Figure 4 shows clearcutting totals for FY 1993 of 132,674 acres, representing 18.1 percent of the total harvest acres. This percentage clearcut is down from the 21.5 percent of total harvest acres reported for FY 1992. This is an even faster decline in the percentage clearcut than proposed in the 1990 RPA Program.

Road construction declined for the third consecutive year, mainly due to the decline of timber harvested.

In FY 1993, a total of 2,625 miles of existing forest development roads were reconstructed, 160 miles more than planned for. This is a decrease from FY 1992, when 3,259 miles were reconstructed. During FY 1993, the Forest Service constructed 816 miles of new road, 156 miles less than planned for the year. This is the third consecutive year that miles of new road construction have decreased. This decrease is mainly due to the decline in the amount of timber harvested. In FY 1993, 2,133 miles of road which were no longer needed in managing the national forests were obliterated, and the land was restored for vegetation.

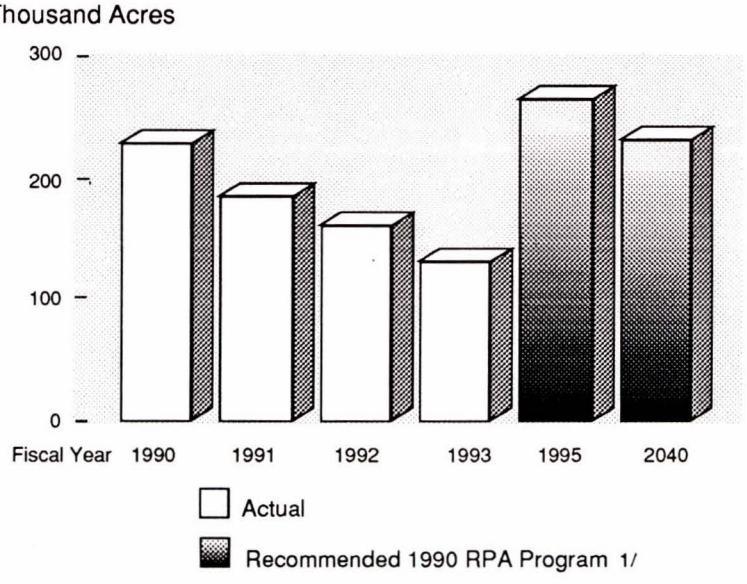
Conserving, restoring, and sustaining the long-term health of rangeland ecosystems is an important objective of the Forest Service's range management program. Rangeland resources are managed for a variety of outputs, including the provision of habitat and forage for wildlife and grazing for domestic livestock. Federal agencies, in partnership

Figure 3.
Total Timber Offered



1/ Since completion of the 1990 RPA Program, increased protection of threatened and endangered species such as the northern spotted owl and the red-cockaded woodpecker, and increased protection of old-growth and watersheds, have resulted in less timber offered than proposed in the 1990 RPA Program.

Figure 4.
Clearcut Harvests



1/ Since completion of the 1990 RPA Program, clearcut acreage has declined both as a result of reductions in total timber harvest acreage and more rapid shifting away from clearcutting as a standard commercial harvest method.

with wildlife and livestock organizations, have continued evaluation of the interaction between big game and domestic livestock. Through the "Seeking Common Ground" effort, nine demonstration projects were funded in FY 1993 to explore these interactions.

"Change on the Range" philosophy...

As part of the continuing "Change on the Range" philosophy, measures on acres suitable for livestock grazing have been replaced with measures reflecting the condition of the total rangeland ecosystem. The objectives for range vegetation in the forest plans are to maintain or restore healthy upland and riparian ecosystems and to maintain multiple resource values. Forest plan standards and guidelines that have been established to achieve these objectives provide specific minimum requirements for maintaining or improving various ecosystem components. These standards and guidelines focus primarily on the 97 million acres in 33 States where grazing is authorized by permit. Of these, 74.3 million acres have range vegetation management objectives in the forest plans. Following applicable forest plan standards and guidelines, forest plan range vegetation resource objectives were achieved on 25.4 million of the 74.3 million acres, largely through management of livestock. An additional 22.1 million of the 74.3 million acres were moved towards meeting forest plan objectives.

Installed 3,288 range improvement structures...

In FY 1993, the Forest Service administered 9,343 paid permits for 9.8 million head months (HM's) of permitted grazing by domestic livestock. Also, a total of 3,288 structural range improvements, such as fences and water developments, were installed to improve management of livestock on forest lands.

...12,000 private mineral operations; 7,000 active mines.

The Forest Service administers energy and minerals resource exploration, development, and production from National Forest System lands. The Forest Service currently monitors and inspects approximately 12,000 private mineral operations each year, primarily involving oil and gas wells. Approximately 3 million acres in national forests were leased in FY 1993. The Forest Service processed about 3,800 proposals to conduct mineral operations. There were an estimated 7,000 active mines within national forests during FY 1993.

Produced minerals valued at $4 billion; raised over $200 million for the Treasury.

During FY 1993, national forests produced 10.5 million barrels of oil, 210 billion cubic feet of gas, 90 million tons of coal (the two largest coal mines in the country are within national forests), 95 percent of domestic lead output, and over 5.5 million tons of phosphate. The value of minerals produced from national forests in FY 1993 is estimated at $4 billion. Mineral production also raised over $200 million in revenues for the Treasury.

About 25,000 unreclaimed mine sites...

Extraction of locatable and leasable minerals is subject to surface management regulation and statutory requirements of the National Environmental Policy Act (NEPA), the Clean Water Act, and the Endangered Species Act. In FY 1993, the agency estimated that 25,000 abandoned and unreclaimed mine sites are located on lands administered by the Forest Service. Most of these sites were worked prior to passage of environmental legislation. To minimize potentially adverse effects on the environment, efforts were made in FY 1993 to inventory inactive sites and to prioritize reclamation and hazard removal efforts.

Fuels reduction in more than 385,000 acres; pest prevention and suppression on 3.1 million acres.

Protecting forest resources from damaging wildfires and forest pests is an essential component of forest management. In FY 1993, more than 385,000 acres of National Forest System lands were treated to reduce fire hazard, about 100,000 acres more than in FY 1992. Pest prevention and suppression activities protecting 3.1 million acres of forested Federal and cooperative lands from gypsy moths, southern pine beetles, dwarf mistletoe, and other insects and diseases were carried out in FY 1993.

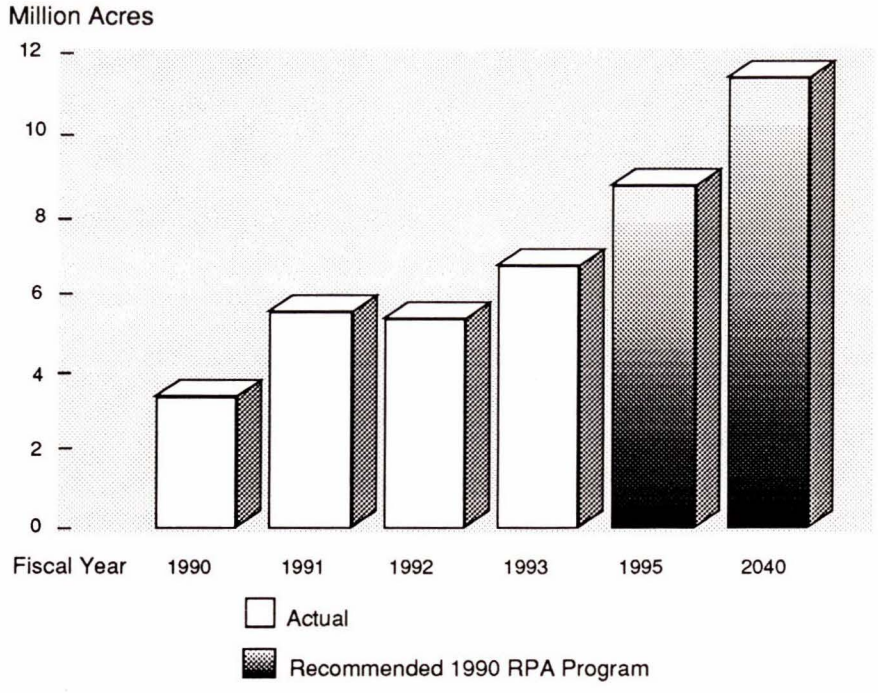
Assistance provided to develop multiresource management plans on 6.9 million acres of nonindustrial private forests.

Multiple-resource planning and stewardship assistance to State and private forest owners emphasizes environmentally sensitive commodity production. Ecosystem management offers a broad framework from which sound ecological management principles can be communicated to nonindustrial private forest (NIPF) landowners. Through programs

encouraging voluntary partnerships, such as the Forest Stewardship Program, the Forest Service is providing assistance across multiple ownerships to manage in an ecologically responsible way. In FY 1993, assistance to NIPF landowners through Federal/State cooperation led to the development of multiresource management plans on 6.9 million acres (figure 5). Total reforestation (planting, seeding and natural regeneration) on NIPF lands reached about 1 million acres in FY 1993 (figure 6).

Figure 5.

State and Private Forestry Multiresource Plans 1/



1/ Includes acres funded by forest resource management and stewardship.

A total of 6,276,696 acres under stewardship management; assisted in the reforestation of 667,999 acres.

The total land under stewardship management in FY 1993 was 2,615,645 acres, almost a million acres more than in FY 1992. The cumulative total under this program since FY 1990 is 6,276,696 acres. This represents the nonindustrial private lands placed under sustained multiple-use management plans (Forest Stewardship Program) by the end of FY 1993. Federal/State rural tree planting was accomplished on 667,999 acres in FY 1993, about the same acreage as in FY 1992.

Environmentally sound timber harvesting video.

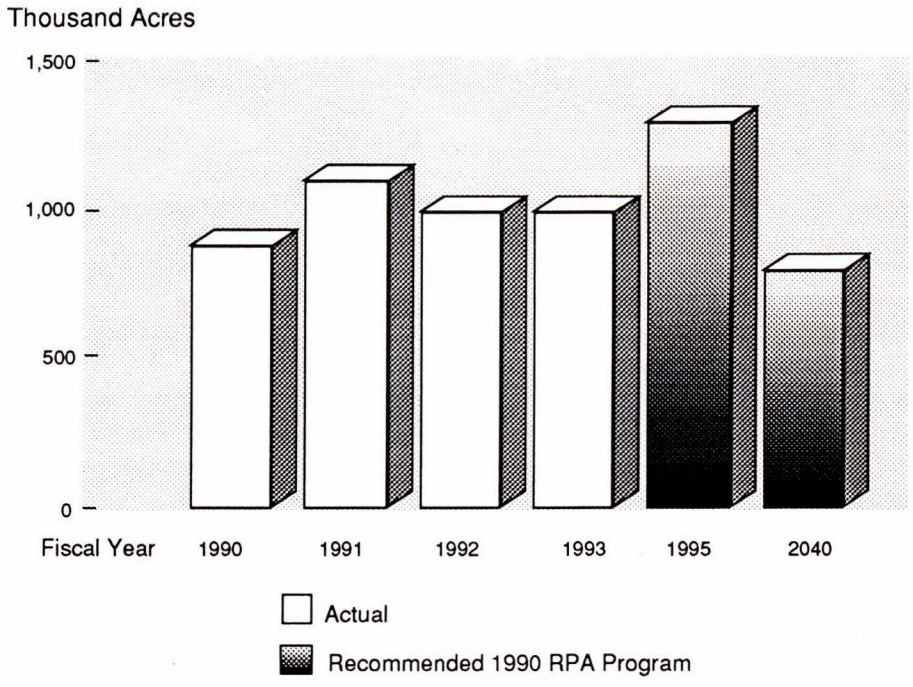
Scientists at the Fernow Experimental Forest produced a video to teach the importance of using best management practices (BMP's) and how to implement them. This video contains practical information covering all the various steps necessary to conduct a successful, environmentally sound timber harvesting operation. The information in the video is applicable to most of the Eastern United States.

Improved Scientific Knowledge About Natural Resources

During FY 1993, the Forest Service continued expansion of its research efforts to enhance the compatibility of competing resources. Research was increased to study the complex interactions of forest and rangeland ecosystems, an understanding essential to expanding resource production opportunities while protecting the environmental integrity of the resource base.

Figure 6.

Total Reforestation on Nonindustrial Private Forest (NIPF) Lands and Projected Accomplishments with S&PF Assistance



Habitat conservation assessments for anadromous and inland fish.

As the Forest Service embraces ecosystem management, it is approaching issues in a broader landscape context. Habitat Conservation Assessments (HCA's) are being prepared on a variety of species, including Pacific salmon and steelhead, small carnivores (fisher, pine marten, lynx and wolverine), marbled murrelet, bull trout, northern goshawk, forest owls (great gray, flammulated, and boreal), and inland cutthroat trout. Numerous cooperators also have been working in partnership with Forest Service experts on the assessment teams.

Forest health monitoring...

The Forest Health Monitoring Program provides information on how forest pests, air pollution, climate variation, and forest management methods interact to affect the overall health of forest ecosystems. When fully implemented, the program will blend data from intensive site-specific monitoring with broad regional and national information to provide a comprehensive assessment of forest conditions. This is a collaborative effort between Forest Service Research, State and Private Forestry, and National Forest System in partnership with other agencies and groups, including the Environmental Protection Agency (EPA), and the National Association of State Foresters. Funding in FY 1993 enabled continuation of detection monitoring in 14 States and initial progress toward establishing intensive site ecosystem monitoring in one forest type.

Forest protection research...

Forest protection research programs are fundamental to the development of improved methods for protecting forest and grassland ecosystems from the adverse effects of insects and diseases. The scale of the research ranges from single species all the way to ecosystem questions of forest health. For example, research at the species level often focuses on single diseases, such as the canker-causing fungus currently threatening butternut trees in the Northeast and Midwest. Forest Service scientists in FY 1993 might have been successful in propagating disease-resistant butternut trees through application of biotechnological methods altering genetic material. At the ecosystem scale are research efforts like the Eastside Forest Ecosystem Health Assessment in eastern Oregon and Washington. Changes in vegetation composition and landscape patterns were monitored over a 50-

year period to evaluate the interaction of human impacts with insects, disease, and fire hazards. This health assessment forms the basis for development of an ecosystem approach to forest planning and management in the area.

Recreational and commercial harvest of special forest products...

National forests support opportunities for recreational gathering and commercial harvest of a variety of special forest products (e.g., Christmas trees, pinyon nuts, jojoba beans). The commercial harvest of forest fungi has become a multimillion-dollar industry. The increased commercial harvest of these products has raised concerns centered around destruction of forest habitat, sustainability of the resource, conflict between recreational and commercial harvesters, and regulation and monitoring of future harvests. The Pacific Northwest Forest Experiment Station has sponsored and participated in several regional workshops to inform resource managers and the public of the unique ecology and management opportunities of forest mushrooms. This technology transfer culminated in a recent publication titled "Biology, Ecology, and Social Aspects of Wild Edible Mushrooms in the Forests of the Pacific Northwest—A Preface to Managing Commercial Harvest."

Recycling research...

Recycling research is developing and refining techniques for recycling wood and paper waste products to reduce the burden on landfill resources and conserve energy and timber resources. For example, Forest Service researchers have developed a cheaper and more effective method of removing ink from waste paper products. Enzymes have been substituted for expensive chemicals in the de-inking process. At the Rocky Mountain Station, researchers have replenished organic matter in rangeland ecosystems with city sewage sludge. Application of sewage increases plant growth and water retention while reducing the volume of sewage sludge disposal.

Forest Ecosystem Management Assessment Team (FEMAT) report...for the Pacific Northwest.

Forging strong partnerships between research and land managers is an integral part of implementing a scientifically sound ecological approach to multiple-use management. For example, a collaborative effort involving scientists and technical experts contributed to the development of the 10 management alternatives outlined in the Forest Ecosystem Management Assessment Team (FEMAT) report, which provided vital input to the President's deliberations in development of his strategy for forest management in the Pacific Northwest. The team was assembled as part of President Clinton's effort to resolve the impasse over timber production in spotted owl habitat in the Pacific Northwest. Two significant contributions from the assessment are: (1) the application of ecological knowledge to forest resource management, and (2) the establishment of watershed and riparian areas as fundamental building blocks for landscape scale analysis.

More than 2,500 research accomplishments.

Forest Service Research in FY 1993 had more than 2,500 research accomplishments including books, papers, articles, reports, audio-visual materials and other documents. The number of accomplishments reported in the FY 1992 Forest Service Report is consistent with the above definition.

Responding to Global Resource Issues

Global ecological interactions...

The Forest Service continues to increase scientific exchange and technology transfer to other countries to assist them in their management and use of forest resources and to reduce adverse impacts on global ecosystems. Recognition of the complexity of global ecological interactions has placed greater emphasis on sharing new ideas and scientific knowledge with international partners. Recent national attention on the need for leadership in global sustainable development in areas such as land use, tropical forestry, and environmental education underscores the need for strong coordination in agency international programs.

International forestry development projects...

The Forest Service continues to provide technical expertise and support for international forestry development projects through participation in the Forestry Support Program sponsored by the U.S. Agency for International Development (USAID). In FY 1993, the emphasis of the program in Asia was to improve tropical forest management practices and policies in Indonesia. Further assistance was directed to Indonesia through its selection as

a "focus country," a program designed to concentrate on Forest Service international program development in selected countries.

The Forest Service is expanding and strengthening cooperative relationships and partnerships with other countries and organizations sharing the same commitment to global resource conservation. In FY 1993, the Forest Service convened a forum of "community of interests" from 25 Washington, DC, organizations and agencies to share, exchange, and coordinate the international forestry activities of the U.S. Government.

The Sister Forests Program was expanded to 11 countries.

The Forest Service led the U.S. delegation to the United Nations Food and Agriculture Organization Committee on Forestry and encouraged implementation of UNCED initiatives at the Global Forest Conference, "Beyond UNCED," in Indonesia. The U.S. delegation to the United States-Japan Cooperative Program in Natural Resources (UJNR) Forestry Panel met in Tokyo, also led by the agency, and agreed to increase cooperation in delivering technical forestry assistance to developing countries. A similar agreement was reached with Taiwan. The Sister Forests Program of long-term assistance and exchange of National Forest System personnel with forest units from other countries was expanded to 11 countries in FY 1993.

Global change research...

The U.S. Global Change Research Program is investigating the adverse effects of air pollution, climate change, ultraviolet radiation, and acidic deposition on the productivity and health of global forest ecosystems. The research focuses on disturbance ecology, the flow of atmospheric gas and energy, ecosystem dynamics, and the interaction between human activities and natural resources. Acid rain research and its effect on high mountain wilderness ecosystems is underway in Colorado and Wyoming. Results available in FY 1993 helped land managers monitor and measure conditions of wilderness ecosystems and forecast the effects of air pollution on wilderness. Other global change research focused on the expected rise of carbon dioxide in the atmosphere from global warming. Experiments showed that some plant species, such as loblolly pine, grown under ideal conditions, experience increased growth as carbon dioxide concentration in the atmosphere is increased.

Technical assistance, training, and cooperative research...to the developing world.

Technical assistance, training, and cooperative research to facilitate building the capabilities of the developing world to practice sustainable forest management are provided by the agency. In FY 1993, approximately 207 person years of technical assistance were received by participants. A person year is defined as participation in a given activity for 260 days within a fiscal year. In FY 1993, 552 person years of training were received by participants, and 69 person years of cooperative international research or scientific exchange were achieved.

Addressing The Human Dimension

The human dimension of the Forest Service mission "Caring for the Land and Serving the People" emphasizes the agency's commitment to attain a multicultural and diverse work force that is responsible and accountable for excellence when serving the American people. Providing work, training, and education to the unemployed, youth, elderly, and disadvantaged is a major priority during program planning and implementation. The Forest Service values a multicultural organization as essential to its success and will continue pursuing changes in the work force composition until it becomes representative of the public we serve.

Human Resource Programs

Offered employment and skills training to 135,556 persons.

The development of human resources provides valuable training to Americans in need and also leads to accomplishment of high-priority conservation work. During FY 1993, human resource programs offered employment and skills training to 135,556 persons, including many women and minorities. For an investment of $107.5 million, $131.4 million in accomplishments were returned from all programs. As a special initiative undertaken in

partnership with the National Forest Foundation, the Forest Service established three pilot Youth Forestry Camps in FY 1993. Participants (ages 15-18) from diverse social and economic backgrounds worked on high-priority resource conservation projects while being exposed to ecological concepts and developing important work and social skills.

Natural resource conservation projects reached 35,000 Scouts...

Natural resource conservation education programs are another agency effort to encourage youth training and education with emphasis on increased awareness, knowledge, and appreciation of natural resources. There were numerous accomplishments in FY 1993, such as the Forest Service-sponsored prototype of the President's "Americorps" national service initiative. College and graduate students were recruited to help inner-city youth learn about natural resources and conservation. Other accomplishments include leveraging $2.5 million with other Federal, State, and local agencies, schools, and private industries to support and fund approximately 200 natural resource conservation projects nationwide, and reaching 35,000 Scouts and 15,000 adults at the 1993 Boy Scout Jamboree through the Forest Service conservation program, "Caring for Your Forest—Fun and Responsibility."

Achieving a Multicultural Organization

Resource decisions more responsive to the broad spectrum of insights and experiences of society can be achieved through diversifying the educational and ethnic background of the Forest Service work force. The Forest Service has continued to work toward the goals expressed in the March 1991 report, "Toward a Multicultural Organization," by focusing FY 1993 implementation in six areas: training and development; work environment; outreach and recruitment; standards for accountability; work and family; and recognition. Efforts to enhance workplace accessibility for people with disabilities were promoted through new policies in FY 1993, requiring fully accessible meeting and training sites and installation of telecommunication devices for the deaf at all administrative sites.

Work force composition...

The work force composition by race/national origin by the end of FY 1993 was 84.5 percent white, 4.2 percent African American, 4.6 percent Native American/Alaskan Native, 1.4 percent Asian/Pacific Islanders, and 5.2 percent Hispanic. By gender, 39.6 percent (32.8 percent non-minority and 6.8 percent minority) was female and 60.4 percent (51.7 percent non-minority and 8.7 percent minority) was male. These proportions are very similar to those achieved in FY 1992.

Partnerships with educational institutions to encourage minority study in natural resources...

Long-term goals to achieve multicultural diversity are realized through investment in the natural resource education of young people with backgrounds differing in race, color, sex, religion, and national origin. Ongoing partnerships with educational institutions encourage minority study in natural resources through the development of university curriculums in forestry and natural resource related fields. For example, through the Historically Black Colleges and Universities (HBCU) Program, the Forest Service developed a "Center of Excellence" proposal with Alabama A&M University. The Forest Service employed more than 200 summer interns through the USDA Summer Intern Program that included the 1890 Land Grant and other HBCU. The Forest Service also supported 37 projects, valued at $1.8 million, through the HBCU Comprehensive Program. In a new partnership with the Hispanic Association of Colleges and Universities (HACU), the Forest Service hired 32 summer interns from HACU institutions across the country.

Evolving Administrative Initiatives

Other important Forest Service initiatives contribute to improvements in all Forest Service program areas.

Information Management

The Forest Service has recently adopted a new information management framework (IMF) designed to move the agency toward an integrated information environment. Implementation of the strategy progressed in FY 1993, with the appointment of a chief information officer to oversee the effort.

Project 615 to support GIS and image processing.

Project 615 is an ongoing effort to upgrade the capability of the Forest Service computing environment to support geographic information system (GIS) technology and image processing. GIS increases resource managers' capability to analyze complex biological, physical, and social data. A 1-year pilot plan for Project 615 was approved in FY 1993.

Government effectiveness and efficiency...

Administrative Efficiencies

In FY 1993, Vice President Gore's National Performance Review Team report identified the Forest Service as one of two agencies successfully implementing pilot programs to increase Government effectiveness and efficiency. The designation as a National Reinvention Lab, as well as Secretary Espy's Team USDA program, offers the Forest Service considerable authority and flexibility to move forward and improve the way the agency performs public service. For example, the percentage of total payments incurring interest penalties was reduced from 2.1 percent in FY 1992 to 1.7 percent in FY 1993. The Prompt Payment Act of 1982, as amended, requires agencies to pay interest penalties to vendors whenever payments are not made within the agreed to time periods.

Restructuring of the law enforcement program to strengthen the independence of investigation.

Law Enforcement

Public trust in the agency to fulfill its stewardship responsibilities is an important element to reinforce as reinvention progresses. The internal investigations and handling of whistleblower complaints have substantially increased the law enforcement workload in recent years. During FY 1993, because of the seriousness of misconduct allegations and increasing law enforcement responsibilities, the agency established a new staff for law enforcement and investigations. The restructuring of the law enforcement program in FY 1993 was designed to strengthen the independence of investigations and to do away with any perceived or real interference.

... 400 cooperative law enforcement agreements to provide a safer environment for forest visitors.

In FY 1993, the Cooperative Law Enforcement Program provided funding for approximately 400 agreements that allowed the Forest Service to cooperate with State and local law enforcement agencies and with other Federal agencies to provide forest visitors a higher level of protection and service.

Drug enforcement efforts in calendar year 1993 resulted in the seizure of over $3.8 million worth of assets and the destruction of several billion dollars' worth of drugs. The agency continues to place special emphasis on drug control on National Forest System lands.

Summary

The Forest Service is a dynamic institution, constantly evolving in response to changing public values and needs, changing statutory and legislative requirements, and changing scientific knowledge influencing the way the agency approaches sustainable multiple-use management of national forests and grasslands. Highlights of accomplishments in FY 1993 begin with the update and clarification of institutional goals through development of the Mission, Vision, and Guiding Principles. This national view of what the organization should become, coupled with the resource vision articulated in the 1990 RPA Strategic Plan and other agency long-term plans offer a solid framework to guide the agency into the next century. Progress toward achieving these organizational goals was enhanced in FY 1993 through efforts to implement the principles of ecosystem management, and through continued efforts to diversify the educational and ethnic background of the work force.

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